

ELEVENTH ANNUAL REPORT
OF
THE TRUSTEES
OF THE
MASSACHUSETTS
STATE SANATORIUM
AT RUTLAND.

NOVEMBER 30, 1907.



BOSTON:
WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
18 POST OFFICE SQUARE.
1908.

APPROVED BY
THE STATE BOARD OF PUBLICATION.

CONTENTS.

	PAGE
TRUSTEES AND OFFICERS,	5
REPORT OF THE TRUSTEES,	7
REPORT OF THE SUPERINTENDENT,	12
REPORT OF THE TREASURER,	27
LIST OF WAGES,	37
STATISTICAL TABLES,	41
CLIMATOLOGICAL DATA,	50

OFFICERS

OF THE

MASSACHUSETTS STATE SANATORIUM.

TRUSTEES.

J. P. RAND, M.D., <i>Secretary,</i>	. . . . .	WORCESTER.
A. C. GETCHELL, M.D.,	. . . . .	WORCESTER.
MRS. FANNY B. RUSSELL,	. . . . .	BROCKTON.
MRS. SYLVIA B. KNOWLTON,	. . . . .	WEST NEWTON.
JEREMIAH SMITH, JR., <i>Chairman,</i>	. . . . .	CAMBRIDGE.
ASHUR HYNEMAN,	. . . . .	BOSTON.
W. E. PARKHURST,	. . . . .	CLINTON.

CONSULTING PHYSICIANS.

HERBERT C. CLAPP, M.D.,	. . . . .	BOSTON.
EDWARD O. OTIS, M.D.,	. . . . .	BOSTON.

RESIDENT OFFICERS.

FREDERICK L. HILLS, M.D.,	. . . . .	<i>Physician, Superintendent and Treasurer.</i>
GEORGE N. LAPHAM, M.D.,	. . . . .	<i>Physician.</i>
P. CHALLIS BARTLETT, M.D.,	. . . . .	<i>Physician.</i>
B. SWAYNE PUTTS, M.D.,	. . . . .	<i>Physician.</i>
JOHN E. RUNNELLS, M.D.,	. . . . .	<i>Assistant Physician.</i>
CHARLES A. REDICK, M.D.,	. . . . .	<i>Assistant Physician.</i>

MARY E. THRASHER,	. . . . .	<i>Matron and Superintendent of Nurses.</i>
CHARLES E. CARROLL,	. . . . .	<i>Steward and Clerk.</i>
RUTH MONTAGUE,	. . . . .	<i>Dietitian.</i>
WALTER C. BROWN,	. . . . .	<i>Chief Engineer.</i>
FREDERICK H. DRURY,	. . . . .	<i>Farmer.</i>

Commonwealth of Massachusetts.

TRUSTEES' REPORT.

To His Excellency the Governor of the Commonwealth and to the Honorable Council.

The trustees of the Massachusetts State Sanatorium submit their eleventh annual report.

Important changes in administration have taken place during the past year. On Feb. 15, 1907, Dr. Walter J. Mareley, the faithful and efficient superintendent and treasurer from the opening of the sanatorium, left our service to become superintendent of the Minnesota State Sanatorium. The trustees selected to fill the position Dr. Frederick L. Hills, assistant superintendent of the New Hampshire State Hospital, who began his work immediately upon Dr. Mareley's departure. Dr. Hills has shown great industry and marked executive and administrative ability.

Massachusetts was the first State to build a sanatorium, and it is some evidence of the results accomplished at Rutland that other States are following this example. Loss of our staff is, unfortunately, the penalty of a reputation for success. Dr. Henry B. Dunham and Dr. Bayard T. Crane have both resigned to enter the service of other States about to open sanatoria. Dr. Dunham left on Nov. 1, 1907, after eight years of valuable service, to become first assistant at the New Jersey State Sanatorium, and Dr. Crane, who went to Rutland in 1904, left upon Sept. 1, 1907, to become the head of the Maryland State Sanatorium. Their places have been filled by Dr. P. Challis Bartlett and Dr. B. S. Putts.

The Honorable Council having recommended that the superintendent be placed in entire control of the sanatorium, the

visiting physicians, Dr. Herbert C. Clapp and Dr. Edward O. Otis, retired July 1, but have generously consented to serve as consulting physicians, without salary. In order to accomplish the change in the method of administration regulations for the government of the sanatorium have been adopted, placing the superintendent in full control and defining the duties of the other officers.

On Feb. 8, 1907, Mr. A. W. Esleeck resigned from the Board of Trustees, of which he was an original member, and on Aug. 1, 1907, the chairman, Dr. J. F. A. Adams, also resigned. Both had shown great interest in and devotion to their duties, and the other members of the Board learned with regret of their resignations. These vacancies were filled by the appointment of Jeremiah Smith, Jr., and Ashur Hyneman, and upon September 6 Mr. Smith was elected chairman of the Board, in place of Dr. Adams.

Some criticism has been made in the past of the number of persons employed. During the year 40 former patients, who remained after their discharge to perform light work in exchange for board, have been dismissed and their work distributed among the other employees and such patients as are pronounced by the medical staff fit for very light work. The trustees are examining the list of employees very carefully to see if a reduction is possible. This examination is not yet finished.

On Oct. 1, 1906, the contract with the town of Rutland for a water supply expired. This contract was originally made for a term of ten years, at a flat rate of \$1,000 per year, with no provision for any increase corresponding to an increase in the size of the sanatorium, which has doubled within that period. After negotiations extending over almost a year, a new contract has been made for two years from Oct. 1, 1906, by which the sanatorium installs meters and pays 12 cents a thousand gallons for water. Under this arrangement the annual expense for water will be about \$2,000.

The out-patient department, which was established two years ago, upon suggestion of the State Board of Charity, is still maintained, but has not been well patronized.

The infirmary, which accommodates 24 patients, was opened in December, 1906, and has been of great use. The construction of the new piggery, the recreation pavilion and the piazzas, for which appropriation was made by chapter 98 of the Resolves of 1907, is proceeding under the direction of our own employees. The trustees have voted to make use of the appropriation of \$3,500 for the construction of a farmer's cottage, granted by chapter 83 of the Resolves of 1906. Plans have been prepared by William G. Preston, Esq., and construction will be begun immediately.

The building of a new cow barn is an absolute necessity. In the treatment of tuberculosis a supply of pure milk is of the greatest importance, and 800 quarts of milk are used at the sanatorium daily, a substantial part of which comes from the farm. The barn is so old that it is in great danger of falling down, and it is not a fit place to keep cows whose milk is supplied to the sanatorium. Upon testing the herd in October for signs of tuberculosis 20 out of 43 cows were found to be in such a condition as to make it advisable to remove them from the herd. Plans, specifications and estimates for a new cow barn, to cost \$10,000, have been prepared and submitted to the State Board of Charity, as required by chapter 520 of the Acts of 1907, and have been approved by that Board, and the trustees ask for such an appropriation.

The trustees regret to be obliged to report a deficit for the current year of \$20,578.15, for which a special appropriation is necessary. There are several causes for this deficit. The increased quantity and cost of the food used, the additional expense caused by the infirmary, and the fact that the appropriation of last year was some \$7,000 less than the estimates called for, have all contributed. There is an increase in the supplies on hand and paid for, to be carried over to next year, amounting to \$3,200, which should be credited against this deficit.

The estimates for the coming year are as follows:—

For maintenance,	\$185,000 00
For new cow barn,	10,000 00
For other special matters,	23,375 00

The estimate for maintenance is made up as follows:—

Food,	\$81,470 72
Salaries and wages,	51,525 84
Heat, light and power,	15,653 07
Repairs and improvements,	6,682 43
Farm,	6,114 14
Furnishings,	4,260 60
Miscellaneous (includes water, medical and hospital supplies, and all other expenses),	19,293 20
	<hr/>
	\$185,000 00

These estimates are based upon the actual expenses of the past year. The cost per capita has been \$10.07, which is much greater than the cost at any other institution of this Commonwealth. This is inevitable, since the treatment of the earlier stages of tuberculosis consists of fresh air, sunlight, nourishing food in liberal quantities and limited exercise. The cost of maintenance at the sanatoria of other States for the past year is not yet available, but the figures for 1906 show that this cost was \$8.91 per week at the New York State Hospital for Tuberculosis, \$10.30 at the Rhode Island State Sanatorium, and \$12.58 at the Gaylord Farm Sanatorium, which, though not a State institution, receives aid from the State of Connecticut. The cost at Rutland for that period was \$9.38. The trustees believe that the institution cannot fulfil the object for which it was established on an appropriation smaller than the estimates given above.

The special appropriations asked for are much needed and most of them are matters of absolute necessity. They are composed of the following items: Hennerly (\$1,200) and equipment (\$1,800); enlargement of filter-beds (\$1,000); road to Muschopauge station (\$5,000); repair of outside walls (\$2,000); painting all outside woodwork and roofs (\$2,500) and wards (\$2,000); elevator in infirmary (\$2,000) and operating-room (\$1,200); recreation pavilion for women patients (\$2,000); metallic drying-room (\$700); improvement of grounds (\$500); linoleum for corridors (\$500) and watchman's clock system (\$400).

One thousand eggs a day are used, and we need a hennerly to supply part of these. The filter-beds are inadequate, not having been enlarged, while the institution has doubled in size. Every winter they overflow, and claims for damages are made. All the supplies and most of the visitors must travel over a rough country road from the station, and a new and properly built road would save money for the State and make a visit to the sanatorium much less of a hardship for the relatives and friends of the patients. The repairs asked for are necessary to preserve the buildings, the present appearance of which has become a subject of comment by visitors. The infirmary ought to be equipped with an elevator, upon which patients could be taken to the second floor, and with an operating room. A metallic drying room should be installed in the laundry as a precaution against fire. The appropriation for improvement of the grounds has been made annually for some years and the results are apparent to visitors.

JOHN PRENTICE RAND.

ALBERT C. GETCHELL.

FANNY S. RUSSELL.

SYLVIA B. KNOWLTON.

JEREMIAH SMITH, JR.

ASHUR HYNEMAN.

WELLINGTON E. PARKHURST.

SUPERINTENDENT'S REPORT.

To the Trustees of the Massachusetts State Sanatorium.

I have the honor to submit the following report for the year ending Nov. 30, 1907.

At the beginning of the year, Dec. 1, 1906, there were 332 patients in the sanatorium, 175 men and 157 women. There were 948 patients admitted during the year, 477 of whom were men and 471 were women. Of those discharged during the year 469 were men, 470 were women. There were remaining in the sanatorium on Nov. 30, 1907, 183 men and 158 women, — a total of 341 patients. The daily average number of patients for the year was 335. The average monthly population was lowest in June, 327, and highest in October, 341.

Statistical tables, giving in detail information regarding the admissions and discharges, will be found at the end of this report.

APPLICATIONS FOR ADMISSION.

During the year 1,968 applicants were examined for admission. Of this number, 735 were accepted, 503 not accepted and 730 deferred. There were 666 re-examinations, 184 of which were accepted, 166 not accepted and 316 deferred. The total number of examinations for admission was 2,634. Of this number, 1,845, or 70 per cent., were made at the Boston office. The applicants at this office come from the eastern part of the State and represent practically every city and town in Essex and Norfolk counties and the southern part of Middlesex and the northern part of Plymouth counties. Nearly half of the remaining number of examinations were made at Rutland, 93 at the Worcester City Hospital, 92 in Fall River, 91 in Lowell, 77 in Springfield, 37 in Northampton, 15 in Greenfield, 32 in Pittsfield and 6 at the Worcester Hahnemann Hospital.

ADMISSIONS.

Table No. 3 shows that 347, or 36.6 per cent. of the admissions were from Suffolk County. This is accounted for by the fact that 37.3 per cent. of the applications were from residents of Boston.

In the table showing the nativity of patients we find that 41.88 per cent. were of foreign birth. Of the foreign born, 28.9 per cent. were natives of Canada, 21.5 per cent. of Ireland, 16 per cent. of Russia, 6.7 per cent. of Sweden and 6.5 per cent. of England. When we come to consider those born in America of foreign parentage we find that in 55.6 per cent. the paternal ancestry was Irish, in 8.4 per cent. English and 18.3 per cent. Canadian. The paternal nativity one generation removed was American in 71.2 per cent. of all cases admitted.

The age of those admitted was under thirty years in 62 per cent. of the cases. Patients under fourteen years of age are not admitted to the sanatorium. Quite frequently application is made for the admission of children between the ages of ten and fourteen years, and for whom the sanatorium has no proper accommodations. If these younger children were taken separate quarters and some school facilities would be needed for them. Indeed, it is debatable whether it is wise to admit children under sixteen years of age, as is done at present. They are obliged to mix in the wards with the older patients; they are restless under the enforced rest and the restraint necessary in an institution of the size of this; they are generally unappreciative of the seriousness of the disease and the necessity of conforming to strict discipline. Experience has shown that they relapse quickly when freed from institution care because of negligence in following up the treatment.

It has also been found that patients over fifty years of age are not good subjects for treatment here. They withstand the cold poorly, and are, as a rule, lacking in the vitality and recuperative powers sufficient to lead such an enforced out-of-door life as is required of our patients. Occasionally they are admitted for a short period, more with the hope of giving them such an understanding of the treatment that they can carry it

out more successfully at home than of effecting an arrest of the disease.

The average age of the men discharged was twenty-seven years, eleven months, and of the women was twenty-seven years, seven months.

The table of occupations shows that 87 per cent. of the patients were engaged in an in-door occupation at the time of the onset of the disease. Of these in-door workers, 20 per cent. were mill and factory employees. Among the women admitted 47.5 per cent. were engaged in housework, either as housewives or domestics. Of the men admitted 23 per cent. worked out of doors.

MEDICAL WORK.

In the medical work of the sanatorium during the past year we have based our selection of cases and the tabulation of results upon the classification adopted by the National Association for the Study and Prevention of Tuberculosis, viz.: —

Upon Admission.

Incipient (Favorable). — Slight initial lesion in the form of infiltration, limited to the apex or a small part of one lobe. No tuberculous complications. Slight or no constitutional symptoms (particularly including gastric or intestinal disturbance or rapid loss of weight). Slight or no elevation of temperature or acceleration of pulse at any time during the twenty-four hours, especially after rest. Expectoration usually small in amount, or absent. Tubercle bacilli may be present or absent.

Moderately Advanced. — No marked impairment of function, either local or constitutional. Localized consolidation moderate in extent, with little or no evidence of destruction of tissue; or disseminated fibroid deposits. No serious complications.

Far Advanced. — Marked impairment of function, local and constitutional. Localized consolidation intense; or disseminated areas of softening; or serious complications.

Upon Discharge.

Unimproved. — All essential symptoms and signs unabated or increased.

Improved. — Constitutional symptoms lessened or entirely absent; physical signs improved or unchanged; cough and expectoration with bacilli usually present.

Arrested. — Absence of all constitutional symptoms; expectoration and bacilli may or may not be present; physical signs stationary or retrogressive. The foregoing conditions to have existed for at least two months.

Apparently Cured. — All constitutional symptoms and expectoration with bacilli absent for a period of three months; the physical signs to be those of a healed lesion. All constitutional symptoms and expectoration with bacilli absent for a period of two years under ordinary conditions of life.

The length of time mentioned is, of course, somewhat arbitrary, but is intended to cover the cases which frequently occur, where the patients leave a sanatorium for various reasons, contrary to advice, after a stay of a few weeks, although all active symptoms may have ceased completely soon after entrance.

Whole number of patients discharged during the year 939, — men, 469; women, 470. Number who remained one month or less, and whose cases are therefore not considered, 233, — men, 103; women, 130. Number considered in this report 706, — men, 366; women, 340.

The not-considered cases include those admitted for trial and found upon observation to be unsuitable, those who left within one month because of unwillingness to submit to the prescribed routine, those who responded negatively to tuberculin, those who were homesick or dissatisfied, and those who preferred to carry out the treatment at home or elsewhere.

It has been thought best to discontinue the tabulation of results based on the old Rutland classification because of the widely different meaning of the terms "apparently cured" and "arrested" as used in the National Association classification and in that known as the Rutland system. This inevitably led to confusion in the minds of those not perfectly familiar with the two systems, therefore both for the sake of clearness and

because of a desire to make our classification as far as possible uniform with that of the other sanatoria, the older method has been dropped from the report.

It is to be noted that our tables continue to show a large proportion of advanced cases, in spite of the effort constantly being made to obtain those in the earlier stages, — the curable stages of the disease. It would seem that much yet remains to be done to bring home to the people of the Commonwealth the great importance of the early recognition of tuberculosis, and the imperative necessity of the immediate institution of sanatorium treatment if a cure is to be effected. The fatal consequences of temporizing with this disease are well recognized by the medical profession, and by it should be impressed upon the people.

The anti-tuberculosis campaign so vigorously carried on throughout the community in recent years appears, unfortunately, to have given the impression to the general public that tuberculosis is curable, and not to have made it clear that it is the early stages only of tuberculosis that are curable. To be sure, advanced cases can be and are materially benefited, often arrested and sometimes cured, as our results well demonstrate, but the fact still remains that it is the early case, with the disease in its incipient or first stages, that is the curable case, and it is for this class that the sanatorium should make its first and most strenuous efforts.

This year 39 per cent. of the considered cases are classified as incipient, 42 per cent. as moderately advanced and 19 per cent. as far advanced. The results of treatment compare favorably with those obtained in former years. Of 276 incipient cases discharged, 56.16 per cent. were apparently cured, 26.8 per cent. were arrested and 16.32 per cent. improved. There were 295 cases classified as moderately advanced. Of these, 12.54 per cent. were apparently cured, 26 per cent. were arrested, 51.52 per cent. improved and 9.84 per cent. unimproved. The far-advanced cases discharged were 135 in number, classified as follows: apparently cured, 3.7 per cent.; arrested, 10.39 per cent.; improved, 60.79 per cent.; not improved, 25.12 per cent. Taking all classes of cases together, 27.8 per cent. were apparently cured, 23.5 per cent. arrested, 39.5 per cent. im-

proved and 9.2 per cent. not improved. The latter class includes 11 who died. The causes of death and the length of the sanatorium residence of these cases are given in the statistical summary.

The weight records of 706 considered cases were as follows: number gaining weight, 664, — men, 349; women, 315; average gain, men, 10.7 pounds; women, 9.5 pounds; number losing weight, 42, — men, 17; women, 25; average loss, men, 6.4 pounds; women, 4.5 pounds; greatest gain in weight, woman, 50 pounds; man, 42½ pounds.

Tubercle bacilli were found in the sputum of 476, or 67.4 per cent. of the considered cases during their sanatorium residence. The sputum of 52 per cent. of the patients admitted had not been examined before entrance, and of those examined 247 were positive and 98 negative. Of the total number examined while in the sanatorium 232 were negative. There were 28 cases having no sputum at any time during their sanatorium residence.

Tuberculin was given for diagnostic purposes with a positive reaction in the cases of 61 men and 30 women. During the year 62 cases were given tuberculin as a therapeutic agent. All of these cases were moderately advanced or advanced, and such cases were selected for the treatment as had been for some weeks or months in the sanatorium and were not making any definite progress. No very striking results have been noted from the use of tuberculin. In the larger proportion of those treated the course of the disease did not appear to be definitely affected, but with several patients a more marked gain was noticed at the beginning of the treatment and convalescence appeared to be hastened by its use. We are about to undertake some opsonic and blood examination work in connection with the use of tuberculin, and hope to obtain by these means some guide to its more rational use, believing that its administration is of established value in properly selected cases.

The average length of stay of the 706 considered cases was 5 months, 10 days. As a rule, those patients who improve would do well to remain a somewhat longer time at the sanatorium. A patient is not discharged as apparently cured until after a lapse of three months without bacilli and constitutional

disturbance, or as arrested until two months after the disappearance of constitutional symptoms, the physical signs remaining stationary or retrogressive during this period. Many are impelled by the necessity of earning a livelihood to return home before these conditions have existed for this length of time, and at a stage when a stay of two or three months longer should be made to diminish the probability of a relapse. For such persons, and for the assistance of others unable to find suitable residence or occupation after discharge, some system of after-care is urgently needed. Much more lasting good would be done these patients could they be given a fairly remunerative employment and kept under observation and a definite degree of control for a variable period following their discharge. A farm colony could be established in connection with the sanatorium, and would doubtless attract and hold some patients, but for the greater part the call of the city is too alluring and simple country joys make no appeal. For these, after-care must be followed out at home.

The patients who return to the city to their former place of residence and to their former occupation are those especially prone to relapse. The Boston Association for the Relief and Control of Tuberculosis has for several years followed up the discharged Boston patients through its district nurses, and not only has sent us reports of their condition subsequent to discharge, but has done much valuable work of a social-service nature among our discharged patients. This association has expressed through its secretary, Mr. Walter E. Kruesi, a desire to co-operate with the sanatorium in the extension of this work, so that it will take in all of our discharged patients. I believe that this is a phase of the anti-tuberculosis work which we should take up with earnestness because of its far-reaching sociological significance. A social-service worker resident at the sanatorium would be able to get into close touch with the patients who are ready for discharge, assist them in finding suitable employment, arrange with their friends for their home care, direct and aid them in selecting a suitable place to live, instruct them in matters pertaining to home sanitation, and in a variety of ways prove serviceable to the majority of discharged patients, as well as to those who are found unsuitable for admission, but are in need of aid in selecting and carrying out

the right method of living. Work of this nature is being successfully carried on in connection with some of the English sanatoria, and the field is now ripe for the workers along similar lines here.

NON-CITIZEN APPLICANTS.

By chapter 222 of the Acts of 1907, which became operative on March 20, it is required that in the admission of patients to the sanatorium preference shall be given to those applicants who are citizens of the Commonwealth. In answer to an inquiry from your Board relative to the application of this act the Attorney-General of the Commonwealth replied as follows:—

I think the law as it stands to-day authorizes you to admit (1) incipient cases where the persons are citizens; (2) advanced cases where the persons are citizens, and preference must be given to these two. I see no objection to your making a rule that you will not admit far-advanced cases. If you should do that you can then, after having provided for the incipient and advanced cases where the applicants are citizens, admit, first, incipient cases where the applicants are not citizens and then advanced cases where the applicants are not citizens.

In other words, my conclusion is that you would be warranted in giving preference (1) to incipient cases of citizens, (2) to advanced cases of citizens, (3) incipient cases where the applicants are not citizens, and (4) advanced cases where the applicants are not citizens.

We have rigidly adhered to this interpretation of the law, and have deferred all non-citizen applicants until such time as there were no applicants of the first and second classes. Many of the applicants thus deferred have been residents of the Commonwealth for ten, fifteen or more years, and some of them are property owners. Their admission has been delayed for periods ranging from a week to two or three months, and many have not reapplied after their first application.

A woman may be naturalized as a citizen in the same way as a man. Women, however, very seldom take out naturalization papers, and it has therefore been necessary to defer the admission of many young unmarried women who have been for several years residents of the State but are not naturalized. Of the applicants deferred by the action of this law 85 were in the incipient stages of the disease, many of them urgently in

need of sanatorium treatment. Several who lived in Boston were temporarily cared for at the Day Camp at Mattapan, but the majority of them have been compelled to remain at home, under conditions not only favoring an extension of tuberculous infection, with the danger of a curable case running on to an incurable stage, but also increasing the probability of spreading the infection to other members of the family.

The most important function of the sanatorium being to cure the curable, and the incipient cases being those most susceptible of cure, it would seem a far wiser policy for the State to accept at once all incipient applicants who are residents, irrespective of citizenship. I would urge most strongly the amendment of this law so as to permit the acceptance of applicants as follows: first, incipient cases of citizens; second, incipient cases who are not citizens; third, moderately advanced cases who are citizens, and fourth, moderately advanced cases who are not citizens.

EMPLOYEES.

The number of employees upon our pay roll has been and is still a source of much criticism. I feel that this arises in part from the comparison of our pay roll with that of other State institutions which are doing work entirely different in character and purpose, and many of whose inmates are physically strong and capable of doing a good day's work under supervision.

The population of our wards is constantly changing. The average duration of residence is short, and most of the patients leave the sanatorium as soon as they are able to do work of any definite value. For several years it was the policy of the trustees to allow patients to remain after discharge for an indefinite period as board workers, doing four and one-half hours' work daily, with maintenance but without pay. In June this policy was discontinued, and resulted in a dismissal of 45 patients who had been allowed to remain for periods varying from a few weeks to several years. These places have been filled to a large extent by patients who are able to work four and one-half hours daily while under treatment. As a result of this change there has been a slight increase in the number of paid employees, which, it is expected, can soon be reduced by the gradual employment of more patient labor.

Upon the passage of the eight-hour law in April an effort was at once made to have it operative in all departments of the sanatorium, and in accordance with the law we had our work adjusted upon a forty-eight-hour-week basis up to the time of its repeal, about July 1. This resulted in an increased number of employees in some departments during the spring months, and since the repeal of the law it has taken some time to readjust our force. It has since been our policy, so far as possible, to allow each employee one day off each week.

In considering our pay roll it should be remembered that a large number of our employees are ex-patients, and are employed on what is practically an eight-hour basis. The policy of employing ex-patients has been followed for several years, not only because it is often difficult to get well people to engage in sanatorium work, but because we believe it to be a good policy for the State to employ these people where they can work in a good sanitary environment, rather than to send them back to their former occupations and a possible recurrence of the disease. We recognize that oftentimes they cannot work as many hours or as arduously as those who have never had tuberculosis, consequently the work has been adjusted on an eight-hour basis. We are now introducing a scheme for a more systematic supervision of our working force, and we hope to be able to economize in paid labor by the extension of our system of utilizing the work of patients.

LABORATORY.

The sanatorium, with its large amount of clinical material, offers a rich field for research work, which it is hoped we may be able to cultivate during the coming months. More exhaustive study of the cases should be made by recently developed laboratory methods, and it is believed that with a larger and better equipped laboratory we may be in a position to do work of considerable clinical and scientific value. This enlargement of the laboratory can be made at little expense by utilizing a part of the old laundry and adding somewhat to our present equipment.

INFIRMARY.

A new infirmary has been in operation during the year and has proved adequate for our needs the greater portion of the time. Some necessary alterations were made in the bath rooms in the spring, and an office provided for the nurse on each floor. Since June all of the sick patients have been cared for in this building, the men occupying the first floor and the women the second floor. The original plans of the building called for an elevator running from the basement to the second floor. Many times during the year we have appreciated the need of this, especially in the transfer of hemorrhage patients to the women's wards. At present it is necessary to carry the patient on a stretcher up a winding stairway, with the aid of several men, and the danger of this procedure to a patient in such a condition is often extreme. We have obtained estimates, and find that such an elevator as is needed can be installed at a cost not to exceed \$2,000.

OUT-PATIENT DEPARTMENT.

The out-patient department has been continued during the year and receives an average of eight or ten calls weekly. There are generally about 100 patients in Rutland outside of the sanatorium, in the boarding-houses and private sanatoria. Most of these are now under medical supervision, and the charges made for board include the services of a physician on his regular visit twice weekly. There is, therefore, less occasion than formerly for patients in the outside houses to come to the sanatorium as out-patients, and except for the few who come from houses not under medical supervision most of the work in this department consists of laryngeal examinations and treatments.

IMPROVEMENTS.

A recreation pavilion, for which an appropriation of \$2,000 was made at the last session of the Legislature, is now being erected in front of ward H. This is to be a glass enclosed building, 24 feet by 36 feet, and will contain a large fieldstone fireplace. It will be equipped with pool table, card tables and other games, and will offer a much needed source of entertainment to the men patients.

Covered verandas have been erected along the south side of the corridor, between wards E and B and wards F and C. Additional verandas are to be built on wards A and D during the winter.

A room has been partitioned off in the old laundry building to make an office for the dietitian, whose former office in the old administration building has been converted into a telephone room and provided with a booth for the use of the patients.

A large and attractive room at the center, formerly used as a dining room, has been fitted up as a reception room for patients. Here all new patients are now received and their preliminary history taken. Here, also, patients can meet and visit with their friends.

Considerable grading has been done about the new infirmary and the wards of the east wing. This work will be completed in the spring, walks made from the women's wards to the main driveway and trees and shrubbery planted. There is yet much work to be done upon the grounds, and we hope for an annual appropriation for this purpose.

The new piggery, for which \$1,000 was appropriated by the last Legislature, has been erected on a site at some distance from the highway and so situated as not to be objectionable to our neighbors.

FARM.

The late spring and cold weather during the early summer, together with the eight-hour law in operation during May and June, seriously interfered with our farm work, and as a result the products of the farm, with the single exception of the hay crop, are considerably less than in other years.

In October we tested our cows for tuberculosis, and found 20 out of a herd of 43 which gave a positive reaction to tuberculin. These cows were at once isolated and subsequently killed and the stable disinfected. Our present barn is old, unsanitary and unsafe. There is urgent need for the erection of a new and modern cow barn before any attempt is made to replenish our herd.

REPAIRS AND IMPROVEMENTS NEEDED.

The buildings comprising the original plant of the sanatorium are badly out of repair, and will require a large outlay during the coming year to put them into proper condition. These were frame structures, covered with stucco applied upon expanded metal lathing. The latter has rotted away, allowing the stucco to fall off over large areas. Repairs have been made upon this from time to time, but it is now imperative that a large part of this stucco work be removed and replaced by cement applied on galvanized wire lathing over the outside wall of all the older buildings. There are 3,000 square yards of this material to be replaced, at an estimated cost of \$1.25 per square yard, and 1,845 feet of base at 25 cents per foot, making a total estimated expense of \$4,211. We desire to do one-half of this work this year, and are therefore asking for an appropriation of \$2,000 for this purpose.

The verandas on wards A, B, C, D and E are badly out of repair, the floor timbers are rotting away, so that all of these verandas are in an unsafe condition and in need of rebuilding, at an estimated cost of \$575.

The roofs and exterior woodwork of all the buildings except the power house and the infirmary need painting, also the woodwork and walls in many of the wards. The cost of this is estimated at \$4,500.

We need an appropriation of \$500 to provide linoleum for the corridor floors, which are badly worn and difficult to keep in proper condition without this protection.

We are now using an old wooden dry room in the old laundry building. This is a constant source of danger to the whole institution, and should be replaced by a new metallic dry room, which can be built in the new laundry at a cost of \$700.

There is need of a small operating room in the infirmary. The unfinished room on the second floor over the diet kitchen is of sufficient size to allow of the making of an operating room, together with a recovery room and a room for a nurse or doctor, as may be required. The estimated cost of this improvement, including furnishing, is \$1,200.

Provision should be made for the erection and stocking of a hennery, to supply fresh eggs to the sanatorium. This should be in charge of a man qualified for the work and capable of supervising and instructing patients in the profitable conduct of the business. A hennery having a capacity of 1,800 pullets can be built and equipped at an estimated cost of \$3,000.

A watchman's clock should be installed, with stations at various points throughout the wards and other buildings. At present, should any serious accident occur at night there is no way to prove the whereabouts or vigilance of the night watchman at any hour. The cost of installing the clock and the necessary number of stations is estimated at \$400.

The filter-beds are inadequate for the proper disposal of sewage. They have not been enlarged since the opening of the sanatorium. An appropriation of \$1,000 is asked for this purpose.

A pavilion for women patients, similar in size and architecture to the men's pavilion, should be erected in front of ward G. An appropriation of \$2,000 is requested for this purpose.

Previous mention has been made of the necessity for an elevator in the infirmary and of the immediate erection of a new cow barn. Plans for the latter have been made, and estimates obtained for a cow barn with a capacity of 60 head of cattle and for the storage of 100 tons of hay, which can be erected for \$10,000.

We again ask for an appropriation of \$5,000 for a new road to Muschopauge station, and \$500 for further improvement of the grounds.

PER CAPITA COST.

The per capita cost for the year was \$10.07, — an increase of 69 cents over the cost of last year. This was due to the high cost of living, — increased expenditures required for nearly all food and other supplies, — as well as to an increase in the amounts of some food supplies; namely, meat, butter and eggs, demanded by the liberal dietary, which is an important factor in the treatment of tuberculosis.

MEDICAL SERVICE.

Dr. Charles F. Mahoney and Dr. Archibald W. Hughes left the sanatorium April 1, after several months of efficient and faithful service, the former to accept a position as interne at the Long Island Hospital at Boston, and the latter to become resident physician at the Pine Ridge Camp, Providence, R. I. Dr. Bayard T. Crane resigned August 11 to accept the position of superintendent at the Maryland State Sanatorium. Dr. Crane had given nearly three years of valuable service to the sanatorium and carries with him our best wishes for success in his new field. On October 23 Dr. Henry B. Dunham resigned, having been appointed first assistant physician of the New Jersey State Sanatorium. He was a most faithful and worthy officer, and his long experience on the staff of the sanatorium and his skill as a diagnostician make us deeply regret his departure. Dr. P. Challis Bartlett and Dr. B. S. Putts have been appointed to fill the vacancies on the staff, and Dr. C. A. Redick has been appointed interne.

On the first of August Mr. Charles E. Carroll, who has rendered the sanatorium most valuable service as bookkeeper for several years, and more recently as buyer, was appointed steward.

To the many friends of the sanatorium who have generously remembered us with donations of books, magazines, newspapers, warm articles of clothing and other contributions for the patients we express our grateful acknowledgments.

It gives me pleasure to commend the officers and employees for their faithfulness to duty and for the zeal so genuinely manifested for the welfare of the institution. I sincerely appreciate the cordial co-operation given me by the officers and the heads of departments during the past months.

To your honorable Board I am deeply grateful for your helpful counsel and support.

Respectfully submitted,

FREDERICK L. HILLS,
Superintendent.

TREASURER'S REPORT.

To the Trustees of the Massachusetts State Sanatorium.

The following is a statement of the receipts and expenditures of the Massachusetts State Sanatorium for the year ending Nov. 30, 1907:—

RECEIPTS

Cash on hand Dec. 1, 1906, as per tenth annual report, . . .	\$2,500 00
Received from State Treasurer and Receiver-General on current expense appropriation,	161,500 00
Received from State Treasurer and Receiver-General on account current expense appropriation 1906,	4,375 77
Received from State Treasurer and Receiver-General deficit appropriation on current expense 1906,	11,741 44
Received from State Treasurer and Receiver-General on special appropriation,	1,950 64
Received from patients for board and treatment,	44,526 55
Received from cities and towns for support of patients, . .	3,603 06
Received from State soldiers' relief and from charitable associations for support of patients,	4,531 64
Received from patients for hospital and cuspidor supplies, .	2,034 54
Received from patients for telephone and telegraph, . . .	183 73
Received from patients for freight and express,	32 38
Received from patients for stationery and office supplies, .	144 61
Received from patients for sundries,	255 88
Received from sale of farm products,	1,526 38
Received from sale of grease,	1,907 64
Received from sale of other merchandise,	291 18
Received as interest on bank balance,	83 39
	\$241,188 83

EXPENDITURES.

Salaries and wages,	\$47,383 96
Food:—	
Butter,	\$5,678 77
Butterine,	90 20
Beans,	6 19
Bread and crackers,	86 47
Cereals, rice, meal, etc.,	557 16
Cheese,	203 50
Eggs,	9,364 78
	\$15,987 07
<i>Amounts carried forward,</i>	<i>\$47,383 96</i>

<i>Amounts brought forward,</i>	\$15,987 07	\$47,383 96
Flour,	1,470 55	
Fish,	1,929 15	
Dried and fresh fruit,	2,771 87	
Meats,	38,436 62	
Milk,	6,260 87	
Molasses and syrup,	63 77	
Sugar,	1,932 45	
Tea, coffee, broma and cocoa,	966 22	
Vegetables,	2,784 55	
Sundries,	320 35	
	<hr/>	72,923 47
Furnishings: —		
Beds, bedding, table linen, etc.,	\$1,657 16	
Brushes, brooms, etc.,	329 89	
Carpets, rugs, etc.,	13 24	
Crockery, glassware, cutlery,	684 10	
Furniture and upholstery,	492 86	
Kitchen furnishings,	491 68	
Wooden ware, buckets, pails, etc.,	120 14	
Sundries,	70 50	
	<hr/>	3,859 57
Heat, light and power: —		
Coal,	\$13,651 46	
Oil,	218 21	
Sundries,	425 51	
	<hr/>	14,295 18
Repairs and improvements: —		
Brick,	\$136 00	
Cement, lime and plaster,	44 59	
Doors, sashes, etc.,	9 63	
Electrical work and supplies,	373 44	
Hardware, iron, steel, etc.,	255 81	
Lumber,	255 21	
Paints, oils, glass, etc.,	441 83	
Plumbing, steam fittings and supplies,	599 03	
Roofing and materials,	9 99	
Mechanics and laborers (not on pay roll),	2,054 97	
Sundries,	3 75	
	<hr/>	4,184 25
Farm, stable and grounds: —		
Blacksmith and supplies,	\$132 15	
Carriages, wagons, etc., and repairs,	76 55	
Fertilizers, vines, seeds, etc.,	827 31	
Hay, grain, etc.,	2,592 90	
Harnesses and repairs,	61 33	
	<hr/>	
<i>Amounts carried forward,</i>	\$3,690 24	\$142,646 43

<i>Amounts brought forward,</i>	\$3,690 24	\$142,646 43
Cows,	50 00	
Other live stock,	256 19	
Labor (not on pay roll),	656 54	
Tools, farm machines, etc.,	47 72	
Sundries,	160 31	
		4,861 00
Miscellaneous: —		
Books, periodicals, etc.,	\$15 85	
Chapel services and entertainments,	200 00	
Freight, expressage and transportation,	1,439 32	
Hose, etc.,	19 00	
Ice,	113 39	
Labor (not on pay roll),	121 12	
Medicines and hospital supplies,	2,926 13	
Examination of applicants,	1,564 51	
Postage,	516 37	
Printing and printing supplies,	428 91	
Cuspidor supplies,	2,760 45	
Soap and laundry supplies,	2,258 81	
Stationery and office supplies,	482 87	
Travel and expenses (officials),	818 46	
Telephone and telegraph,	665 10	
Water,	651 28	
Sundries,	581 05	
		15,562 62
		\$163,070 05
Extraordinary expense,	\$929 95	
Extraordinary expense, special appropriation,	1,950 64	
Sent to State Treasurer, cash receipts of current year,	54,075 60	
Cash on hand, to be sent to State Treasurer,	5,045 38	
Liabilities of 1906 (paid this year),	16,117 21	
		78,118 78
		\$241,188 83
LIABILITIES.		
Salaries unpaid,		\$4,456 15
Food: —		
Butter,	\$1,167 11	
Butterine,	32 70	
Bread and crackers,	26 63	
Cereals, rice, meal, etc.,	144 05	
Cheese,	57 91	
Eggs,	1,532 24	
Flour,	31 00	
Fish,	428 23	
<i>Amounts carried forward,</i>	\$3,419 87	\$4,456 15

<i>Amounts brought forward,</i>	\$3,419 87	\$4,456 15
Fruit,	451 72	
Meats,	5,130 11	
Milk,	1,571 53	
Molasses and syrup,	1 90	
Sugar,	71 95	
Tea, coffee, etc.,	461 62	
Vegetables,	73 03	
Sundries,	7 81	
	<hr/>	11,189 54
Furnishings: —		
Beds, bedding, table linen, etc.,	\$110 48	
Brushes, brooms, etc.,	25 75	
Crockery, glassware, cutlery, etc.,	131 50	
Furniture and upholstery,	41 11	
Kitchen furnishings,	50 27	
Wooden ware, buckets, pails, etc.,	10 20	
Sundries,	2 10	
	<hr/>	371 41
Heat, light and power: —		
Coal,	\$884 55	
Oil,	18 98	
Sundries,	32 13	
	<hr/>	935 66
Repairs and improvements: —		
Cement, lime and plaster,	\$23 00	
Doors, sashes, etc.,	3 70	
Electrical work and supplies,	2 96	
Hardware, iron, steel, etc.,	50 18	
Lumber,	26 62	
Paints, oils, glass, etc.,	81 69	
Plumbing, steam fitting and supplies,	52 99	
Roofing and material,	68 17	
Mechanics and laborers,	189 50	
Sundries,	39 80	
	<hr/>	538 61
Farm, stable and grounds: —		
Blacksmith and supplies,	\$17 75	
Carriages, wagons, etc., and repairs,	7 00	
Fertilizers, vines, seeds, etc.,	46 25	
Hay, grain, etc.,	196 98	
Labor (not on pay roll),	59 83	
Tools, farm machines, etc.,	1 85	
Sundries,	31 26	
	<hr/>	360 92
Miscellaneous: —		
Books, periodicals, etc.,	\$8 00	
Chapel services and entertainments,	340 00	
Freight, expressage and transportation,	172 06	
	<hr/>	
<i>Amounts carried forward,</i>	\$520 06	\$17,852 29

<i>Amounts brought forward,</i>	. . .	\$520 06	\$17,852 29
Medicines and hospital supplies,	. . .	361 61	
Medical attendance, nurses, etc.,	. . .	27 00	
Examination of applicants,	. . .	636 16	
Postage,	. . .	35 32	
Printing and printing supplies,	. . .	35 90	
Cuspidor supplies,	. . .	54 56	
Soap and laundry supplies,	. . .	97 62	
Stationery and office supplies,	. . .	70 35	
Travel and expenses (officials),	. . .	155 32	
Telephone and telegraph,	. . .	129 59	
Water,	. . .	534 22	
Sundries,	. . .	68 15	
			<hr/> 2,725 86
			<hr/> \$20,578 15

SUMMARY OF CURRENT EXPENSES.

Total expenditures,	. . . . .	\$163,070 05
Unpaid bills,	. . . . .	20,578 15
		<hr/> \$183,648 20
Deducting amount of sale of supplies,	. . . . .	4,849 96
		<hr/> \$178,798 24
Deducting further increase of supplies on hand and paid for		
Nov. 30, 1907,	. . . . .	3,247 49
		<hr/> \$175,550 75

Dividing this amount by the daily average number of patients, 335, gives an average annual cost of \$524.03, equivalent to an average weekly net cost of \$10 07+.

Respectfully submitted,

FREDERICK L. HILLS,

Treasurer.

RUTLAND, Dec. 1, 1907.

RUTLAND, MASS., Jan. 1, 1908.

I have this day examined the accounts of the treasurer of the Massachusetts State Sanatorium, and have found them correct.

C. E. WATSON,
Expert Accountant.

FARM ACCOUNT.

DR.	
Products of the farm on hand, as estimated Dec. 1, 1906, .	\$3,304 23
Blacksmith,	114 90
Board of men,	1,350 00
Coal,	12 76
Grain and feed for stock,	2,711 88
Labor,	5,517 88
Live stock,	306 19
Seeds and fertilizers,	924 93
Sundries,	126 92
Tools, machinery and repairs,	245 45
Waste from sanatorium kitchen,	200 00
	\$14,815 14
CR.	
Board of driving horses for six months, at \$15 per month, .	\$390 00
Board of driving horses for six months, at \$20 per month, .	480 00
Labor for sanatorium putting in ice, hauling provisions from station, etc.,	1,489 77
Milk, 113,755 quarts, at \$0.04½,	5,118 98
Fruit, vegetables and wood supplied, as estimated in stock Dec. 1, 1906,	331 23
Fruit and vegetables supplied, as per list following, . .	1,584 88
Beef supplied, as per list following,	108 32
Pork supplied, as per list following,	42 13
Cider supplied, as per list following,	9 80
Sold:—	
Hogs,	1,424 71
Cows and calves,	90 00
Hay and grain,	9 17
Teaming,	2 50
Grease,	200 00
Products of farm on hand, as estimated Dec. 1, 1907, per list following,	1,956 00
Increase of live stock on farm,	157 00
	\$13,394 49
Deficit against farm,	1,420 65
	\$14,815 14

PRODUCTS OF THE FARM DELIVERED TO THE SANATORIUM DURING THE
YEAR ENDING NOV. 30, 1907.

Apples, 6 barrels,	\$9 00
Beans, 76 boxes, at \$0.40 to \$1.25,	75 80
Beef, 1,645½ pounds, at \$0.07 to \$0.08½,	108 32
Beets, 65 bushels, at \$0.65 to \$0.75,	47 20
Beet greens, 16 boxes, at \$0.30,	4 80
Cabbage, 1,770 pounds, at \$0.01 to \$0.08,	33 12
Carrots, 97½ boxes, at \$0.60,	58 50
Cauliflower, 274 heads, at \$0.02½ to \$0.15,	9 59
Celery, 170 dozen, at \$0.75 to \$1 per dozen,	157 95
Cider, 98 gallons, at \$0.10,	9 80
Corn, 779 dozen, at \$0.15 to \$0.25 per dozen,	195 90
Cucumbers, 28,675, at \$0.50 to \$1.50 per hundred,	175 33
Egg plant, 6, at \$1 per dozen,	50
Leeks, 112½ bushels, at \$0.40 to \$0.50,	46 80
Lettuce, 332½ dozen, at \$0.25 to \$0.80,	145 68
Onions, 11½ boxes, at \$0.75 to \$1, and 18 bunches, at \$0.05,	11 00
Pease, 34½ boxes, at \$1.50 to \$1 75,	55 75
Peppers, 19 quarts, at \$0.02 to \$0.05,	84
Pork, 494½ pounds, at \$0.08½ to \$0.09½,	42 13
Radishes, 23 boxes, at \$0.60 to \$1,	18 70
Rhubarb, 1,354 pounds, at \$0.02 to \$0.03,	32 86
Squash (Hubbard), 11,730 pounds, at \$0.02,	234 60
Squash (marrow), 5,155 pounds, at \$0.01 to \$0.01½,	74 03
Squash (summer), 167 pounds, at \$1 to \$1.50 per hundred-weight,	25 08
Swiss chard, 24 boxes, at \$0.50 to \$1,	13 50
Tomatoes, 102 boxes, at \$0.75 to \$1.25,	97 25
Tomatoes (green), 5 barrels, at \$1,	5 00
Turnips, 93½ boxes, at \$0.30 to \$0.60,	56 10

\$1,745 13

ON HAND DEC. 1, 1907.

Hay, 80 tons, at \$18,	\$1,440 00
Ensilage, 75 tons, at \$6.66,	500 00
Rye, 16 bushels, at \$1,	16 00

\$1,956 00

SPECIAL APPROPRIATIONS.

HOSPITAL FOR CONSUMPTIVES LOAN FUND.

Unexpended balance,	\$280 30
-------------------------------	----------

NEW FARMHOUSE.

[Resolves 1906, chapter 83.]

Appropriation,	\$3,500 00
<hr style="width: 100%;"/>	
Balance available,	\$3,500 00

PIAZZAS.

[Resolves 1907, chapter 98.]

Appropriation,	\$2,000 00
Expended during year,	613 51
<hr style="width: 100%;"/>	
Balance available,	\$1,386 49

PIGGERY.

[Resolves 1906, chapter 83; Resolves 1907, chapter 98.]

Appropriation,	\$1,000 00
Expended during year,	334 55
<hr style="width: 100%;"/>	
Balance available,	\$665 45

GRADING.

[Resolves 1907, chapter 98.]

Appropriation,	\$500 00
Expended during year,	118 00
<hr style="width: 100%;"/>	
	\$382 00

PAVILION.

[Resolves 1907, chapter 98.]

Appropriation,	\$2,000 00
<hr style="width: 100%;"/>	
Balance available,	\$2,000 00

SPECIAL REPORT.

The following special report is prepared in accordance with a resolution of the National Conference of Charities and Corrections, adopted May 15, 1906:—

Population.

	Males.	Females.	Totals.
Number of patients present at beginning of fiscal year.	175	157	332
Number received during year,	477	471	948
Number discharged during the year,	469	470	939
Number of deaths included in preceding item,	8	3	11
Number at end of the fiscal year,	183	158	341
Daily average attendance (<i>i.e.</i> , number of inmates actually present) during the year.	180	155	335
Average number of officers and employees during the year.	90	61	151

Expenditures.¹

Current expenses:—

1. Salaries and wages,	\$47,383 96	
2. Clothing,	—	
3. Subsistence,	72,923 00	
4. Ordinary repairs,	4,184 25	
5. Office, domestic and out-door expenses,	38,578 84	
Total,		\$163,070 05

Extraordinary expenses:—

1. New buildings, land, etc.,	—	
2. Permanent improvements to existing buildings,	\$929 95	
Total,		929 95

Grand total, \$164,000 00

¹ Includes only money actually expended during the year, and does not represent total cost of maintenance, which includes unpaid bills of \$20,578.15.

REAL AND PERSONAL ESTATE.

REAL ESTATE

Buildings,	\$419,450 00	
Land,	44,652 00	
	<hr/>	\$464,102 00

PERSONAL ESTATE.

Live stock on the farm,	\$5,120 00	
Produce of the farm on hand,	1,956 00	
Carriages and agricultural implements,	1,507 00	
Machinery and mechanical fixtures,	1,968 60	
Beds and bedding in inmates' department,	8,722 00	
Other furniture in inmates' department,	1,764 00	
Other miscellaneous furniture,	7,840 00	
Personal property of State in superintendent's department,	1,666 00	
Ready-made clothing,	750 00	
Dry goods,	443 92	
Provisions and groceries,	3,125 59	
Drugs and medicine,	885 05	
Fuel,	5,606 00	
Library,	900 00	
Other supplies, undistributed,	5,315 38	
	<hr/>	\$47,569 54
		<hr/>
		\$511,671 54

LIST OF WAGES.

Superintendent and treasurer (per annum),	\$2,500 00
Physician (per annum),	1,200 00
Physician (per annum),	1,000 00
Physician (per annum),	800 00
Assistant physician (per annum),	600 00
Assistant physician (per annum),	200 00
Matron and superintendent of nurses (per annum),	1,200 00
Steward and clerk (per annum),	1,000 00
Bookkeeper (per month),	40 00
Chief engineer (per month),	90 00
Dietitian (per month),	75 00
Dietitian's assistant (per month),	25 00
Farmer (per annum),	900 00
Stenographer (per month),	35 00
Nurses, day (per month),	\$30 00 to 40 00
Nurses, night (per month),	40 00
Attendants (per month),	\$13 00 to 30 00
Supervisors, male (per month),	15 00 and 35 00
Supervisor, female (per month),	17 00
Office assistant (without living),	30 00
Cook (per month) (without living),	85 00
Baker (per month) (without living),	75 00
Assistant cook,	50 00
Engineers and firemen (per month) (without living),	\$50 00 to 60 00
Firemen (per month),	30 00 to 40 00
Carpenter (per day) (without living),	2 70
Carpenter (per month),	25 00
Night attendant (per month) (without living),	48 00
Diet cook (per month),	17 00
Head laundress (per month),	30 00
Storeroom man (per month),	30 00
Storeroom man helper,	15 00
Storekeeper,	40 00

Pharmacist (per month),	\$18 00		
General work, male and female (per month), . . .	\$10 00	to	25 00
Laundry help, male (per month),	15 00	to	25 00
Laundry help, female (per month),	15 00	to	20 00
Ward help, male (per month),	15 00	to	25 00
Kitchen help, male (per month),	15 00	to	35 00
Expressman (per month),	28 00		
Coachman (per month),	30 00		
Farm help (per month),	\$15 00	to	28 00
Farm help (per day) (without living),	1 75	to	2 00
Waiters, male (per month),	13 00	to	18 00
Waiters, female (per month),	13 00	to	19 00
Serving room men (per month),	14 00	to	30 00
Serving room girls (per month),	12 00	to	15 00
Diet kitchen girls,	12 00	to	16 00

STATISTICAL TABLES.

STATISTICAL TABLES

FOR THE YEAR ENDING NOV. 30, 1907.

TABLE I. — *Admissions and Discharges.*

	Men.	Women.	Totals.
Number of patients in sanatorium Dec. 1, 1906, .	175	157	332
Number admitted Nov. 30, 1906, to Dec. 1, 1907, .	477	471	948
Number discharged Nov. 30, 1906, to Dec. 1, 1907, .	469	470	939
Number of deaths (included in preceding item), .	8	3	11
Number remaining in sanatorium Nov. 30, 1907, .	183	158	341
Daily average number of patients,	180	155	335

TABLE II. — *Monthly Admissions and Discharges, with Average Monthly Population.*

DATE.	ADMITTED.		DISCHARGED.		Daily Average.
	Men.	Women.	Men.	Women.	
1906.					
December,	30	32	25	33	332
1907.					
January,	35	23	38	24	335
February,	30	26	31	23	334
March,	35	38	39	43	336
April,	46	44	43	33	330
May,	50	44	54	54	335
June,	47	53	34	56	327
July,	42	52	38	47	339
August,	47	44	49	56	339
September,	39	44	38	35	333
October,	32	46	36	39	341
November,	44	25	44	27	340

TABLE III. — *Distribution of Examinations.*

PLACE OF EXAMINATION.	Number.
Boston, Massachusetts General Hospital,	1,845
Rutland,	346
Worcester City Hospital,	93
Fall River,	92
Lowell,	91
Springfield,	77
Northampton,	37
Pittsfield,	32
Greenfield,	15
Worcester, Hahneman Hospital,	6
Total,	2,634

TABLE IV. — *Residence of Patients admitted.*

COUNTIES.	MEN.	WOMEN.	TOTALS.
Suffolk,	179	168	347
Middlesex,	88	90	178
Essex,	46	53	99
Worcester,	54	65	119
Bristol,	22	22	44
Hampden,	20	15	35
Norfolk,	17	18	35
Plymouth,	26	18	44
Hampshire,	9	2	11
Berkshire,	6	10	16
Barnstable,	1	—	1
Franklin,	8	10	18
Dukes,	1	—	1
Totals,	477	471	948

TABLE V. — *Nativity of Patients admitted.*

BORN IN —	Men.	Women.	Totals.	BORN IN —	Men.	Women.	Totals.
United States, .	276	275	551	Roumania, .	—	1	1
Austria, . .	4	3	7	Russia, . .	37	27	64
Canada, . .	46	68	114	Scotland, . .	5	4	9
Denmark, . .	3	2	5	Sweden, . .	13	14	27
England, . .	14	12	26	Syria, . .	1	1	2
France, . .	1	—	1	Turkey, . .	2	1	3
Germany, . .	1	5	6	Finland, . .	1	4	5
Greece, . .	1	—	1	Belgium, . .	1	—	1
Ireland, . .	43	43	86	Azores, . .	3	2	5
Italy, . .	12	4	16	Hungary, . .	1	1	2
Newfoundland, .	1	2	3	Armenia, . .	7	—	7
Norway, . .	1	2	3	Egypt, . .	1	—	1
Poland, . .	1	—	1				
Portugal, . .	1	—	1	Totals, .	477	471	948

American born, foreign parentage : —

TABLE V. — *Nativity of Patients admitted* — Concluded.

FATHER BORN IN —	Men.	Women.	Totals.	FATHER BORN IN —	Men.	Women.	Totals.
Austria, .	1	—	1	Portugal, . .	1	—	1
Canada, . .	22	28	50	Russia, . .	4	5	9
Denmark, . .	2	—	2	Scotland, . .	2	1	3
England, . .	12	11	23	Sweden, . .	2	2	4
Germany, . .	8	5	13	Azores, . .	1	1	2
Ireland, . .	81	71	152	Hungary, . .	1	—	1
Italy, . .	6	2	8				
Jamaica, . .	1	—	1	Totals, .	147	126	273
Poland, . .	3	—	3				

TABLE VI. — *Civil Condition of Patients admitted.*

	Men.	Women.	Totals.
Married,	187	199	386
Single,	272	248	520
Widowed,	14	21	35
Divorced,	2	2	4
Separated,	2	1	3
Totals,	477	471	948

TABLE VII. — *Age of Patients admitted.*

	Men.	Women.	Totals.
14 to 20 years,	76	89	165
20 to 30 years,	217	206	423
30 to 40 years,	131	137	268
40 to 50 years,	45	34	79
Over 50 years,	8	5	13
Totals,	477	471	948

TABLE VIII. — *Occupations.*

	Men.	Women.		Men.	Women.
Artists,	1	1	Canvassers,	2	—
Attendants,	2	2	Cash boy,	1	—
Ball player,	1	—	Carpenters,	9	—
Barbers,	3	—	Cigarmakers,	3	1
Bartender,	1	—	Clerks,	50	20
Bell boy,	1	—	Coachmen,	3	—
Blacksmiths,	2	—	Conductors, electric railway.	5	—
Bookbinders,	3	1	Contractors,	2	—
Bookkeepers,	5	6	Cooks,	1	3
Brakemen,	4	—	Dentist,	1	—
Brass finisher,	1	—	Domestics,	—	25
Brewer,	1	—	Draughtsman,	1	—
Bridge tender,	1	—	Dressmakers,	—	7
Bundle girl,	—	1	Electricians,	5	—
Cabinet makers,	3	—	Elevator men,	2	—
Candy maker,	1	—	Engineer, locomotive,	1	—

TABLE VIII. — *Occupations* — Continued.

	Men.	Women.		Men.	Women.
Engineer, mechanical,	1	-	Ladies' maid, . . .	-	1
Engineers, stationary,	6	-	Laundresses, . . .	-	8
Engraver, . . .	1	-	Letter carrier, . . .	1	-
Factory and mill oper- atives.	77	88	Librarian, . . .	1	-
Farmers, . . .	4	-	Longshoreman, . . .	1	-
Fireman, locomotive,	1	-	Machinists, . . .	24	-
Fireman, stationary, .	1	-	Masons, brick, . . .	2	-
Fishermen, . . .	2	-	Messenger, . . .	1	-
Floor layer, . . .	1	-	Milkman, . . .	1	-
Foremen, . . .	2	-	Milliners, . . .	-	6
Furs, . . .	-	1	Motormen, . . .	3	-
Gardeners, . . .	2	-	Musicians, . . .	5	4
Glaziers, . . .	2	-	Newsboy, . . .	1	-
Grocers, . . .	4	-	Newspaper reporters,	2	-
Hackman, . . .	1	-	No work, . . .	-	5
Harness maker, . . .	1	-	Nursemaids, . . .	-	3
Hatmakers, . . .	2	-	Nurses, student, . .	-	2
Hostlers, . . .	5	-	Nurses, trained, . .	-	4
Housewives, . . .	-	157	Optician, . . .	1	-
Housework, . . .	-	42	Packers, . . .	4	-
Inspector gas com- pany.	1	-	Painters, . . .	9	-
Insurance solicitors, .	4	-	Peddler, . . .	1	-
Interpreters, . . .	1	1	Pharmacist, . . .	1	-
Iron moulders, . . .	3	-	Photographers, . . .	3	-
Iron workers, . . .	3	-	Plasterers, . . .	2	-
Junk dealer, . . .	1	-	Plumbers, . . .	2	-
Laborers, . . .	22	-	Poolroom, . . .	2	-

TABLE VIII. — *Occupations* — Concluded.

	Men.	Women.		Men.	Women.
Porter, . . .	1	—	Stonecutters, . . .	5	—
Pressmen, . . .	2	—	Students, . . .	28	25
Printers, . . .	13	—	Tailors, . . .	13	2
Sailors, . . .	3	—	Teachers, . . .	1	9
Salespeople, . . .	14	9	Teamsters, . . .	19	—
Salvation Army, .	—	1	Telephone operators,	—	5
Seamstresses, . .	—	4	Telegraph operator, .	1	—
Shippers, . . .	5	—	Undertaker, . . .	1	—
Shoecutters, . . .	7	—	Upholsterer, . . .	1	—
Shoemakers, . . .	14	—	Waiters, . . .	2	14
Steamfitter, . . .	1	—	Watchmakers, . . .	5	—
Stenographers, . .	6	13	Watchmen, . . .	4	—

TABLE IX. — *Classification of Results (National Association Classification).*

	INCIDENT.				MODERATELY ADVANCED.				FAR ADVANCED.				TOTALS.			
	Men.	Women.	Totals.	Per Cent.	Men.	Women.	Totals.	Per Cent.	Men.	Women.	Totals.	Per Cent.	Men.	Women.	Totals.	Per Cent.
Apparently cured, .	82	73	155	56.16	14	23	37	12.54	3	2	5	3.70	99	98	197	27.8
Arrested, .	41	33	74	26.80	49	28	77	26.10	8	6	14	10.39	98	67	165	23.5
Improved, .	19	26	45	16.32	74	78	152	51.52	39	43	82	60.79	132	147	279	39.5
Not improved, ¹ .	1	1	2	.72	15	14	29	9.84	21	13	34	25.12	37	28	65	9.2
Totals, .	143	133	276	-	152	143	295	-	71	64	135	-	366	340	706	-

¹ Including 11 deaths.

TABLE X. — *Comparison of Percentages since the Adoption of National Association Classification.*

INCIPIENT CASES.	1905.	1906.	1907.
Apparently cured,	39.2	50.4	56.2
Arrested,	46.7	40.1	26.7
Improved,	12.0	8.9	16.3
Not improved,	2.0	.6	.8

TABLE XI. — *Number of Patients having Hemorrhages.*

	Men.	Women.	Totals.
Hemorrhage prior to entrance,	196	157	353
Hemorrhage in sanatorium,	61	30	91
Totals,	257	187	444

Per cent. of cases with record of hemorrhage, 62.8.

TABLE XII. — *Deaths, Duration of Disease, Length of Stay in Sanatorium and Cause of Death.*

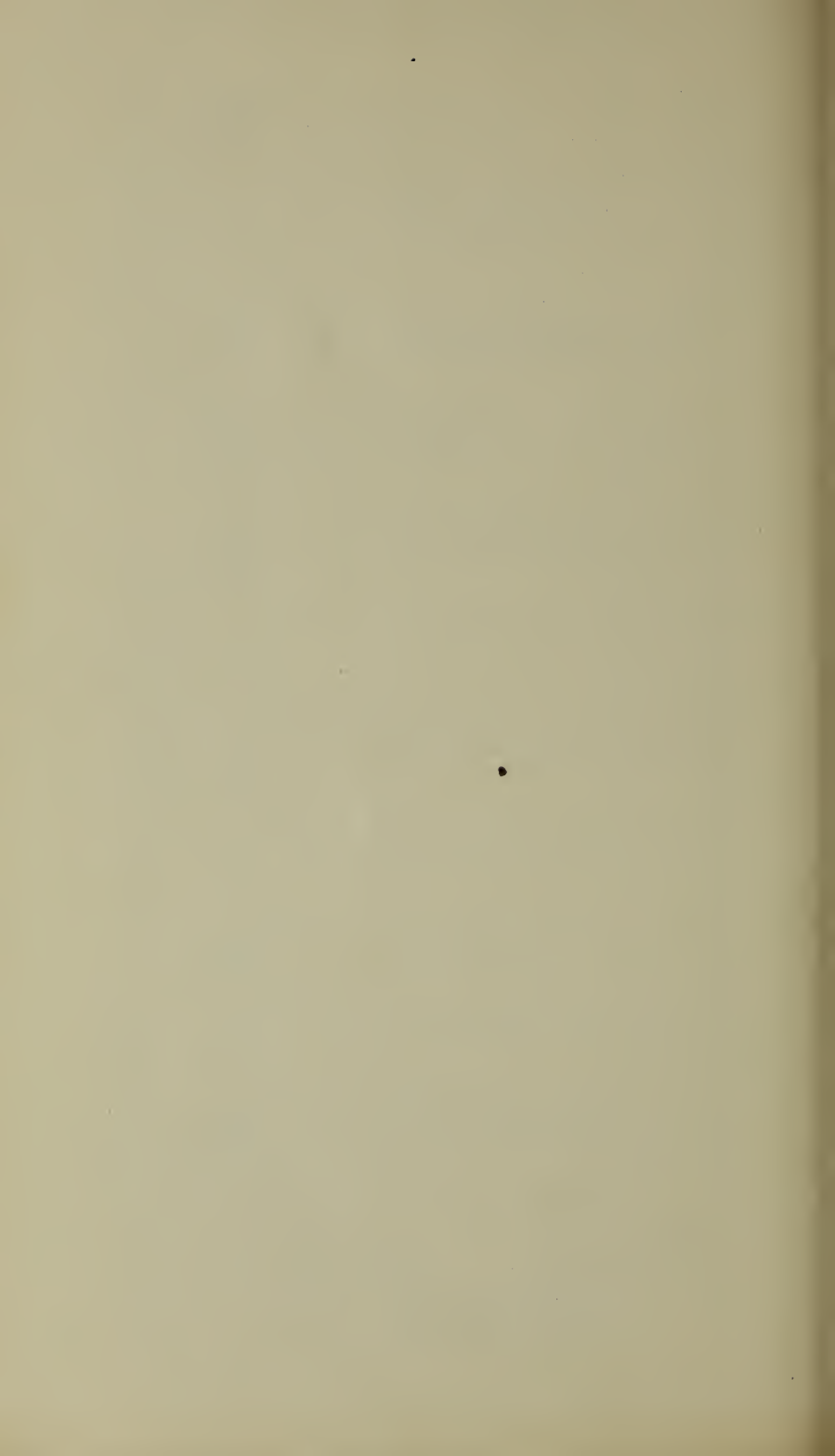
No.	Duration.	Stay.	Cause.
4537, .	8 weeks, .	3 months, 15 days,	Bronchiactasis with rupture of lung.
4829, .	9 months, .	3 months, 5 days,	Pulmonary tuberculosis.
5089, .	3 months, .	10 days, .	Diffuse miliary tuberculosis.
4664, .	7 months, .	6 months, 15 days,	Pulmonary tuberculosis.
4785, .	4 years, .	6 months, 1 day, .	Tubercular meningitis.
5112, .	3 to 4 years,	1 month, 21 days,	Pulmonary tuberculosis, hemorrhage.
5554, .	1 year, .	19 days, .	Pulmonary tuberculosis.
5605, .	Unknown, .	1 month, 1 day, .	Tubercular meningitis.
4429, .	6 months, .	6 months, 15 days,	Acute miliary tuberculosis.
5490, .	Unknown, .	1 month, 8 days, .	Sarcoma of the lung.
5485, .	Unknown, .	2 months, 8 days,	Pericarditis.

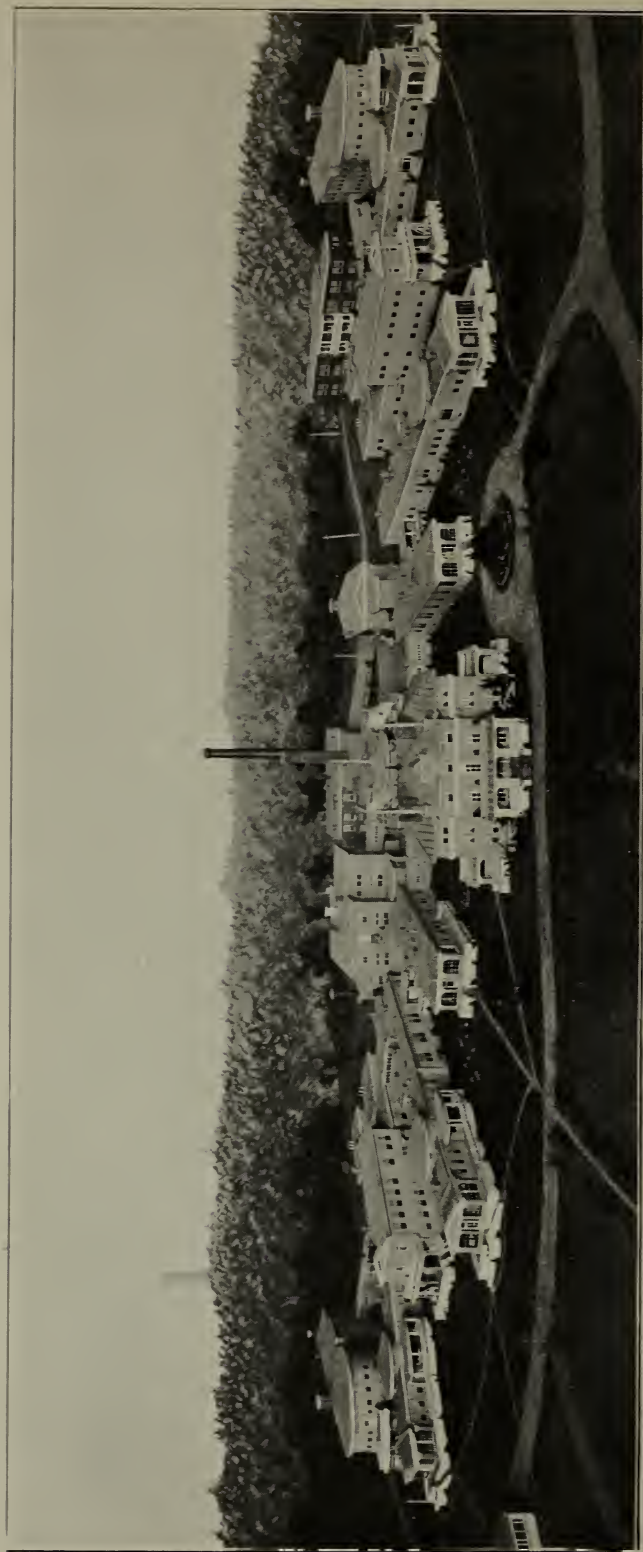
TABLE XIII.—*Admissions and Discharges from the Beginning of the Sanatorium.*

	Number.	Per Cent.
Admitted,	5,763	—
Discharged,	5,422	—
Not considered,	1,088	—
Considered,	4,334	—
Arrested or apparently cured,	1,880	43.39
Improved,	2,053	47.38
Not improved (including 40 died),	401	9.23

Climatological Data, Massachusetts State Sanatorium, Rutland, Altitude, 1,160 Feet, for the Official Year, beginning Dec. 1, 1906, and ending Nov. 30, 1907.

DATE.	Mean Tempera- ture.	Clear Days.	Partly Cloudy Days.	Cloudy Days.	Days with Rain or Snow.	Days with Fog.	Precipitation (Rain, in Inches and Tenths).	Precipitation (Snow, in Inches and Tenths).	Wind Movement. Miles.	Humidity.	Percentage of Possible Sunshine.
1906.											
December, .	21.5	6	9	16	14	2	1.46	34.00	6,988	76.9	Whole year taken.
1907.											
January, .	21.2	5	13	13	12	1	.80	23.25	7,445	72.3	
February, .	14.3	7	14	7	11	1	.09	17.54	7,792	72.0	
March, .	31.9	11	10	10	11	1	.37	15.50	7,650	66.9	
April, .	37.8	4	17	9	11	3	.90	23.75	7,915	63.0	
May, .	48.9	4	17	10	9	5	3.11	4.00	7,623	65.4	
June, .	61.6	5	17	8	11	2	4.79	-	6,490	68.7	
July, .	68.4	13	17	1	8	1	2.96	-	6,217	67.9	
August, .	65.3	4	22	5	10	5	1.43	-	6,055	67.0	
September, .	59.1	8	10	12	14	3	9.43	-	6,379	78.4	
October, .	45.3	19	9	3	11	-	6.62	-	7,390	73.0	
November, .	37.4	16	6	8	8	-	5.72	4.50	5,930	80.8	
Totals, .	512.7	102	161	102	130	24	37.68	122.54	83,864	852.3	59
Averages, .	42.7	8.5	13.4	8.5	9.2	2	3.14	10.20	6,988.6	71.0	





MODEL OF MASSACHUSETTS STATE SANATORIUM